Instructions - Parts List

APEX On-Demand Pump

311307F
EN

For pumping non-flammable fluids including motor oils, hydraulic fluid, and antifreeze. Do not use to pump water.

Model 260110, 2.3 gpm (9 lpm), 115 VAC
370 psi (2.59 MPa, 25.9 bar) Maximum Working Pressure

Model 260111, 3.0 gpm (11 lpm), 115 VAC
550 psi (3.85 MPa, 38.5 bar) Maximum Working Pressure

Model 260113, 4.0 gpm (16 lpm), 115 VAC
470 psi (3.29 MPa, 32.9 bar) Maximum Working Pressure

Model 260114, 4.0 gpm (16 lpm), 115 VAC
650 psi (4.55 MPa, 45.5 bar) Maximum Working Pressure

Model 260112, 3.0 gpm (11 lpm), 12 VDC
400 psi (2.8 MPa, 28 bar) Maximum Working Pressure

Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions. See Table of Contents on page 2.

PROVEN QUALITY. LEADING TECHNOLOGY.

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Warnings

The following general warnings are for the setup, use, grounding, maintenance, and repair of this equipment. Additional, more specific warnings may be found throughout the body of this manual where applicable. *Symbols appearing in the body of the manual refer to these general warnings. When these symbols appear throughout the manual, refer back to these pages for a description of the specific hazard.*

⚠ WARNING

FIRE AND EXPLOSION HAZARD

When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources, such as cigarettes and portable electric lamps.
- Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.
- Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
- Ground all equipment in the work area.
- Use only grounded hoses.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a fire extinguisher in the work area.

ELECTRIC SHOCK HAZARD

Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

⚠ WARNING

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

PRESSURIZED EQUIPMENT HAZARD

Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow **Pressure Relief Procedure** in this manual, when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine Graco replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your Graco distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

BURN HAZARD

Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.

Installation

These On-Demand dispensing pumps are positive displacement gear pumps. The motors are totally enclosed 115 VAC or 12 VDC units, with sealed bearings, and require minimal maintenance.

When unpacking, check for shipping damage. Report any shipping damage to delivering carrier immediately. See **Parts**, page 10.

System Plumbing

The On-Demand pumps deliver a constant output flow even with a varying load. It is important the system plumbing be of adequate size to handle the rated pump flow at a pressure drop that is less than maximum rated pressure for the pump model used. All plumbing and hoses used in the installation should have a pressure rating compatible with the pump selected.

Flow and pressure switch settings

Model No.	Pressure Switch Setting	Output Flow Rate
260110	370 psi (2.59 MPa, 25.9 bar)	2.3 gpm (8.9 lpm)
260111	550 psi (3.85 MPa, 38.5 bar)	3.0 gpm (11.4 lpm)
260113	470 psi (3.29 MPa, 32.9 bar)	4.0 gpm (15.5 lpm)
260114	650 psi (4.55 MPa,45.5 bar)	4.0 gpm (15.5 lpm)
260112	400 psi (2.8 MPa, 28 bar)	3.0 gpm (11.4 lpm)

If the system pressure drop at the rated pump flow is greater than the pressure switch setting, the motor will cycle on and off when the hose valve is opened to dispense fluid. If this happens, reduce system pressure by using a larger diameter hose or using a less restrictive valve.

Mounting Pump on Tank

1. Install supplied bung adapter fitting (12) into the tank bung port and tighten.
2. Use a 3/4 in. (19 mm) steel or PVC pipe with 3/4 npt pipe threads on one end as a suction tube.
3. Measure the length from the top of the bung adapter to the bottom of the tank. Cut the suction tube length to 1/2 in. (13 mm) less than this measurement.
4. Apply pipe thread sealant to suction tube threads and install pipe into pump inlet.
5. Insert suction tube assembly through bung adapter and lower pump onto the bung adapter.
6. Position the pump so that the outlet port is in the desired position. Tighten the swivel nut on the pump to the bung adapter.

Connection Hose

A flexible hose must be used to connect the pump outlet to solid plumbing. The pump outlet port is 1/2 NPT female.

Electrical Installation

115 VAC models

Models 260110, 260111, 260113, and 260114, use a 115 VAC, single phase, 60 Hz motor. The electrical circuit supplying the motor must be on a circuit breaker and be rated to carry a minimum current greater than the motor full load current.

Motor current ratings:

260110: 10.6 amps full load

260111: 13.6 amps full load

260113: 18.0 amps full load

260114: 21.0 amps full load

1. Turn power switch OFF.
2. Remove conduit box cover by removing screws in the opposite corner of cover. A 1/2 in. (13 mm) conduit opening is provided on the right side of the conduit box just below the pressure switch.
3. Connect the 115 VAC to the black wire in the conduit box.
4. Connect the neutral supply wire to the two white wires in the conduit box. Make sure both white wires are connected. The small diameter wire is the pressure switch.
5. Connect ground wire to the motor housing using the green screw in the motor housing inside the conduit box.
6. Replace conduit cover, making sure gasket is in place.
7. Finish wiring the electrical circuit to the breaker box.

12 VDC model 260112

Motor current rating: 62 amps full load. Use 8 AWG or larger for supply wires.

1. Turn power switch OFF.
2. Use an appropriate size ring terminal to attach the black (negative) supply wire to the negative post near the back of the motor. Ensure the existing small black wire remains on the post.
3. Use an appropriate size ring terminal to connect the red (positive) supply wire to the relay post (16) at the front of the motor. This post is the one closest to the pump inlet and outlet. Do not connect the positive supply wire directly to the positive post of the motor or the motor will run continuously. Ensure the small red wire remains on the front post.

Priming

1. Attach the connection hose to the outlet of the pump. Insert the opposite end of the hose into the tank through the fill opening.
2. Turn power switch ON. The pump should prime in a few seconds. If priming does not start, see steps 4-6.
3. When pumps starts to prime, turn power switch OFF. Go to step 7.
4. If priming does not start, remove the outlet fitting (18) by disconnecting the small diameter sensing hose (17) from the outlet fitting and remove the fitting.
5. Fill the outlet port of the pump to within 1/2 in. (13 mm) of the top.
6. Replace the outlet fitting and reconnect the sensing hose. Repeat step 2. Once the pump is primed the inlet check valve will prevent loss of prime.
7. Attach the connection hose to the system plumbing.

Operation

When system is not in use, always turn power switch OFF. Failure to do so can result in a spill if a hose ruptures or a leak occurs in the system plumbing. If a leak occurs, pressure will drop in the system signaling the pump to turn on.

See **Parts**, page 10 for reference numbers.

The on-demand dispensing pumps sense the pump outlet pressure and turn the pump on or off depending on the pressure. When a dispensing valve is opened, the pressure in the system drops and the pump will start pumping fluid. When the dispensing valve is closed, the pressure increases and the pump will stop.

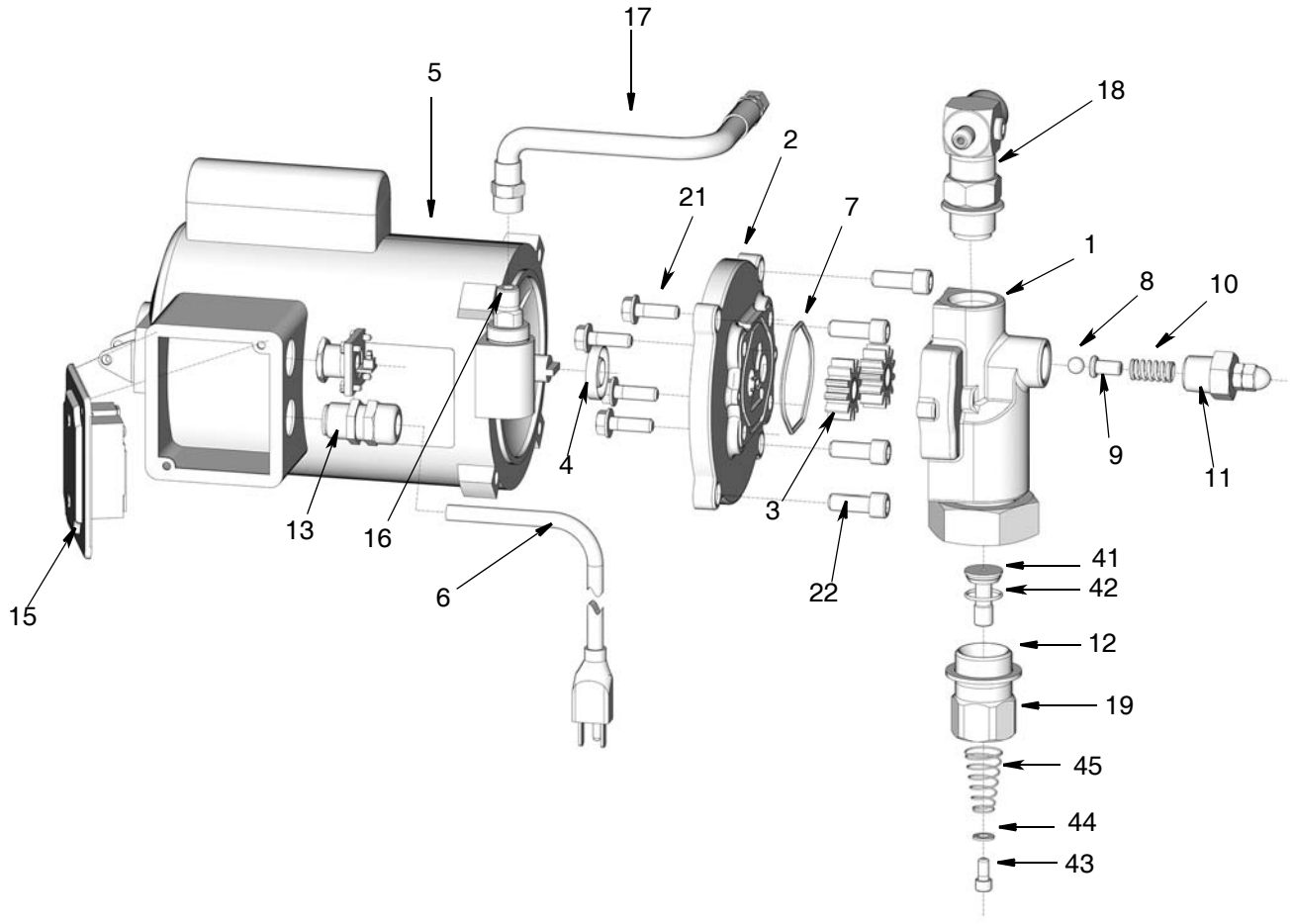
1. To start the pump, turn power switch ON. Power switch is located on the back side of the motor.
2. Place the outlet of the dispensing valve into the fill tube of the vehicle.
3. Open the dispensing valve to the full open position until the desired amount of fluid has been dispensed.
4. To stop dispensing, close the dispensing valve.

Troubleshooting

Problem	Cause	Solution
Motor runs but pump will not prime.	Motor rotation wrong.	Check wiring instructions for possible problems (260112 only).
	Dirt under pressure relief valve or seal.	Remove pressure relief valve and inspect, clean, or replace if damaged.
	Oil depth too high to prime.	See **Priming Pump**, page 6.
	Worn or damaged gears.	Remove cover and inspect gears. Replace if worn or damaged.
	Oil level low.	Refill tank.
	Cover seal damaged.	Replace if worn or damaged.
	Air leak in suction tube.	Inspect all joints in suction tube, make sure all joints have sealant applied.
	Air lock in system.	This may occur if filter or meter or automatic shut-off nozzle is used. If this occurs, fill pump and meter with fluid through top of pump.
	Motor does not run at proper speed.	Check electric connections. Ensure supply voltage is at the proper level.
Oil leaking in motor mount.	Faulty or damaged motor shaft seal.	Replace shaft seal (4).
	Motor shaft worn.	Replace motor (5) if shaft has groove worn in seal area.
Unit pumps but output flow is low.	Air leak in suction tube.	Check to make sure all joints in suction tube are sealed.
	Suction tube too close to tank bottom.	Suction tube must have a 2 in. (51 mm) minimum clearance.
	Tank empty.	Refill tank.
	Tank not vented.	Tank must be vented to atmosphere.
	Worn or damaged gears.	Remove cover and inspect gears (3). Replace if worn or damaged.
	Damaged motor.	Replace motor (5).
	Clogged hose or nozzle.	Inspect and clean.

Problem	Cause	Solution
Motor stalls when nozzle is closed.	Bypass relief valve is stuck.	Inspect relief valve, making sure ball is free. Replace if damaged.
	Low supply voltage.	Check supply voltage.
	Gears damaged and binding.	Inspect gears. Gears should turn freely. Replace if damaged.
	Faulty pressure switch.	Replace pressure switch (20).
Motor overheating.	Gears binding.	Check to make sure gears turn freely on shaft.
	Clogged hose or nozzle.	Inspect and clean if required.
	Operating pump more than 30 minutes continuous duty.	Limit operation to 30 minutes per hour.
Switch will not turn pump on.	Blown fuse or tripped breaker.	Replace fuse or reset breaker.
	Electrical problem.	Check that supply voltage is proper and getting to pump.
	Defective pressure switch (20).	Check and replace if defective.
	Damaged or defective motor.	Check motor (5), replace if damaged or defective.
	Outlet pressure above pressure switch limit.	Open dispense valve to relieve pressure.

Parts
Models: 260110, 260111, 260113, 260114



ti25006

Ref. No.	Description	Qty.
1a	PUMP BODY	1
1b	PUMP BODY, high flow	1
2	ADAPTER, pump motor	1
3a	GEAR, pump	2
3b	GEAR, pump, high flow	2
4	SEAL, shaft	1
5a	MOTOR, 115 VAC, 3/4 HP	1
5b	MOTOR, 115 VAC, 1 HP	1
5c	MOTOR, 115 VAC, 1.5 HP	1
5d	MOTOR, 115 VAC, 2 HP	1
5e	MOTOR, 12 VDC, 3/4 HP	1
6	POWER CORD (models 260110 and 260111 only)	1
7	O-RING, -144 nitrile (Buna N)	1
8	BALL, relief valve	1
9	GUIDE, spring	1
10	SPRING, relief valve	1
11	HOUSING, relief valve	1
12	ADAPTER, bung	1
13	STRAIN RELIEF (not included in model 260112)	1
14	NUT, wire (not included in model 260112)	2
15	RELAY, AC (for models with AC motors)	1
16	RELAY, DC (for model 260112)	1
17	HOSE, 1/4 in. x 12 in.	1
18	CHECK VALVE, outlet	1
19	CHECK VALVE, inlet	1
20a	PRESSURE SWITCH, 370 psi	1
20b	PRESSURE SWITCH, 550 psi	1
20c	PRESSURE SWITCH, 470 psi	1
20d	PRESSURE SWITCH, 650 psi	1
20e	PRESSURE SWITCH, 400 psi	1
21	SCREW, cap, 5/16-18 x 1 in.	4
22	SCREW, cap, 3/8-16 x 1 in.	4
23▲	LABEL, warning (not shown) Part no. 15G901	1
41	POPPET, check valve	1
42	O-RING	1
43	SCREW, cap, hex head	1
44	WASHER, lock	1
45	SPRING, tapered	1

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

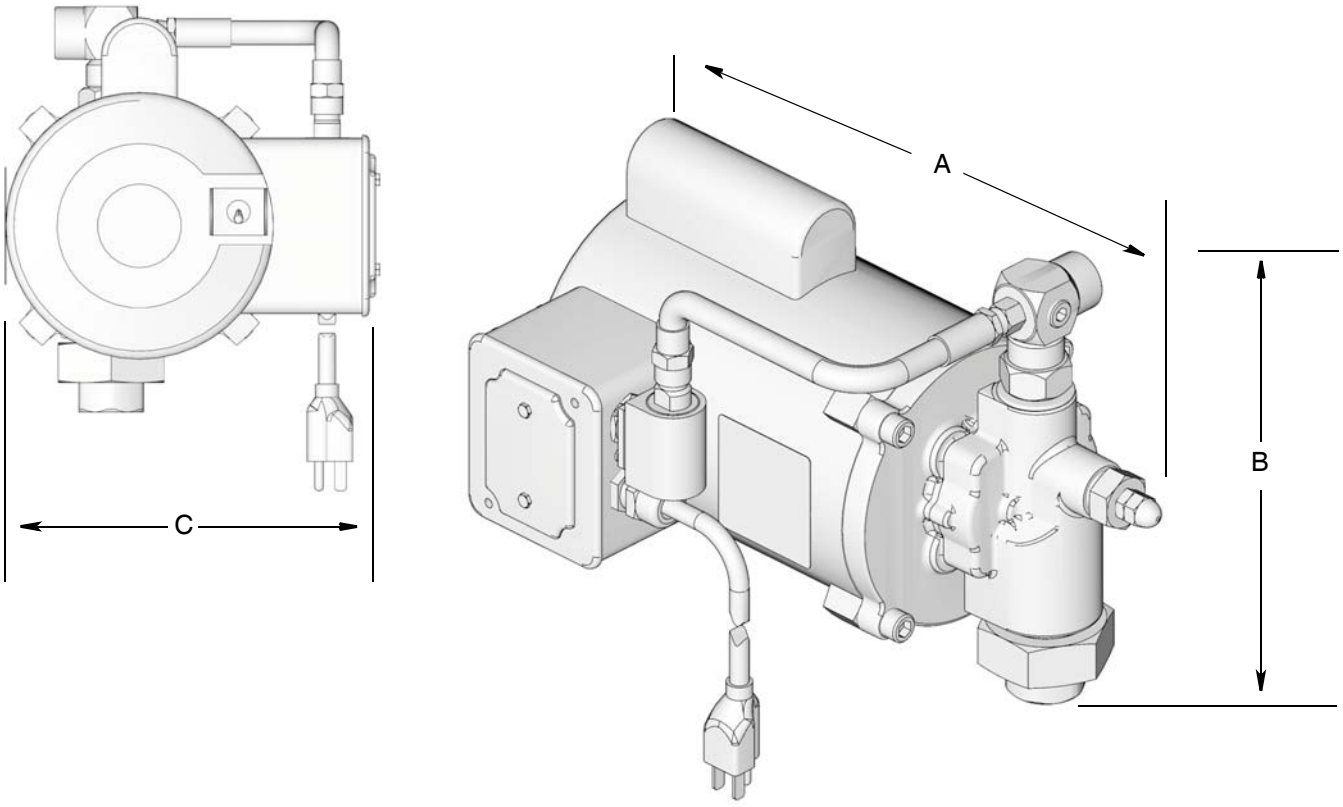
Kits

Kit Number	Description	Includes Items
260061	ADAPTER, bung	12
260120	KIT, fluid (models 260110, 260111, 260112)	1a, 2, 3a, 4, 7, 8, 9, 10, 11, 17, 21, 22
260121	KIT, fluid, high flow (models 260113, 260114)	1b, 2, 3b, 4, 7, 8, 9, 10, 11,17, 21, 22
260276	KIT, AC relay	15
260284	KIT, DC relay (includes switching and power relays)	16
260292	KIT, packing	4, 7
260293	KIT, gear, high flow (models 260113, 260114)	3b, 4, 7
260294	KIT, gear (models 260110, 260111, 260112)	3a, 4, 7
260296	KIT, pressure relief	8, 9, 10, 11
260501	KIT, inlet check valve assembly	19
260502	KIT, outlet check valve assembly	18
260503	KIT, 370 psi pressure switch	20a
260504	KIT, 550 psi pressure switch	20b
260505	KIT, 470 psi pressure switch	20c
260506	KIT, 650 psi pressure switch	20d
260507	KIT, 400 psi pressure switch	20e
260508	KIT, motor, 115 VAC ¾ HP (model 260110)	5a, 6, 13, 14, 15, 23
260509	KIT, motor, 115 VAC 1 HP (model 260111)	5b, 6, 13, 14, 15, 23
260510	KIT, motor, 115 VAC 1.5 HP (model 260113)	5c, 13, 14, 15, 23
260511	KIT, motor, 115 VAC 2 HP (model 260114)	5d, 13, 14, 15, 23
260512	KIT, motor, 12 VDC ¾ HP (model 260112)	5e, 16, 23

Technical Data

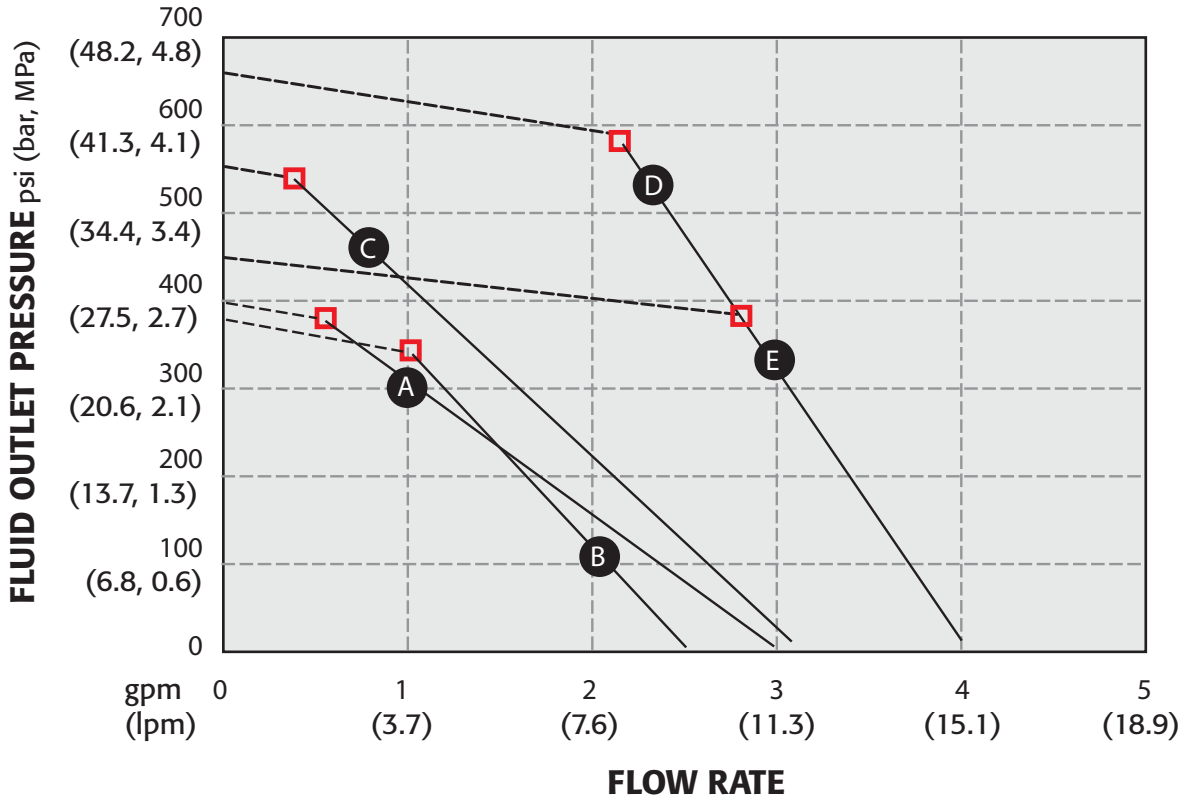
Maximum Working Pressure	Model 260110: 370 psi (2.59 MPa, 25.9 bar) Model 260111: 550 psi (3.85 MPa, 38.5 bar) Model 260113: 470 psi (3.29 MPa, 32.9 bar) Model 260114: 650 psi (4.55 MPa, 45.5 bar) Model 260112: 400 psi (2.8 MPa, 28 bar)
Output Flow	Model 260110: 2.3 gpm (9 lpm) Model 260111: 3.0 gpm (11 lpm) Model 260113: 4.0 gpm (16 lpm) Model 260114: 4.0 gpm (16 lpm) Model 260112: 3.0 gpm (11 lpm)
Inlet Size	3/4 in. npt
Outlet Size	1/2 NPT female
Horsepower	Model 260110: 3/4 hp Model 260111: 1 hp Model 260113: 1-1/2 hp Model 260114: 2 hp Model 260112: 3/4 hp
Max Current	Model 260110: 10.6 amps Model 260111: 13.6 amps Model 260113: 18.0 amps Model 260114: 21.0 amps Model 260112: 62.0 amps
Wetted parts	carbon steel with zinc plating, stainless steel, galvanized steel, aluminum, nitrile, rubber, PVC, PVC cement
Dimensions	See page 13

Dimensions



Models	Length (A)		Height (B)		Width (C)	
	Inches	mm	Inches	mm	Inches	mm
260110	14	355.6	8	203.2	7.75	196.8
260111	14.75	374.6	9	228.6	8.5	215.9
260113	14.5	368.3	9	228.6	8.5	215.9
260114	17	431.8	9	228.6	9.75	247.6
260112	15	381	10.5	266.7	7.75	196.8

Performance Chart



PART NUMBERS	
(A)=260112	(D)=260114
(B)=260110	(E)=260113
(C)=260111	**LEGEND:**
	Pressure switch opens ☐

Notes

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

Graco Information

For the latest information about Graco products, visit www.graco.com.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.

For patent information, see www.graco.com/patents.

Original instructions. This manual contains English. MM 311307

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